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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,746	07/10/2001	Yoshinori Takahashi	36856.526	8463

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EXAMINER

NGUYEN, HIEP

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 02/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,746

Applicant(s)

TAKAHASHI, YOSHINORI

Examiner

Hiep Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is responsive to the amendment filed on 12-04-02. Applicant's arguments with respect to references of Mandai (US Pat. 5,227,739) have been carefully considered but they are not deemed to be persuasive to overcome the reference. Thus the claims remained rejected under Mandai (US Pat. 5,227,739).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction and /or clarification is required.

Regarding claim 1, the recitation "said microstrip line defines a microstrip line resonator" on line 12 is indefinite because a single "microstrip line" cannot define a microstrip line resonator. The recitations "a microstrip line resonator", on line 12 and "a strip line resonator" on line 14 are indefinite because it is not clear whether the "a microstrip line resonator" and the "a strip line resonator" are resonators or parts of a resonator. The recitation "a single resonator is defined by said microstrip line resonator and said strip line resonator" on lines 15 and 16 is indefinite because it is misdescriptive. According to the meaning of this clause, the "a single resonator" is formed by two different resonators: "a microstrip line resonator" and "a strip line resonator". As understood by the examiner the "a single resonator" is defined by a strip line and a microstrip line. The same analysis is true for claims 8 and 14.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-21, insofar as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Mandai et al. (US Pat. 5,227,739).

Regarding claim 1, figure 4 of Mandai shows a resonator comprising: a multi-layer substrate having an upper and lower surface, and including at least two conductor layers (3,5,7) which include at least two grounding conductor layers (3,5,7) and a plurality of dielectric layers (2a-2g), one of the at least two grounding conductor layers (3) being disposed on the lower surface of the multi-layer substrate; a strip line (4) disposed between the at least two grounding conductor layers (3,5); a microstrip line (9) disposed on the upper surface of said multi-layer substrate; and a through hole (V1) formed in said dielectric layers to connect said strip line to said microstrip line; wherein at least a portion of the one of the at least two conductor layers that is closest to said microstrip line and faces the microstrip line is omitted (V1 of conductor 7). The single resonator is defined by a microstrip lines (9), a dielectric layer (2b), two grounding conductors (3, 5) and the stripline (4).

Regarding claims 2, 3, 4 and 5 the portion of said one of the at least two conductor layers that is omitted (7) is disposed "inside" said multi-layer substrate and is arranged such that said grounding conductor layer disposed on the lower surface of said multi-layer substrate faces said microstrip line (9). The omitted portion defines the opening in the one of the least two conductor layers and the shape of the hole is rectangular. The strip line (4) has an U-shaped configuration.

Regarding claims 6 and 7, the strip line is (4) and the micro strip line is (9).

Regarding claim 8, 9, 10, 11, 12 and 13, figure 4 of Mandai shows a resonator comprising: a multi-layer substrate having an upper and lower surface, and including at least two conductor layers (3, 5, 7) which include at least two grounding conductor layers (3,5,7) and a plurality of dielectric layers (2a-2g), one of the at least two grounding conductor layers (3,5) being disposed on the lower surface of the multi-layer substrate, and one of the at least two conductor layers (5,7) that is closest to said microstrip line and faces the microstrip line has an opening (V1) formed therein; a strip line (4) disposed between the at least two grounding conductor layers (3,5); a microstrip line (9) disposed on the upper surface of said multi-layer substrate; and a through hole (V1) formed in said

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dielectric layers to connect said strip line to said microstrip line. The grounding conductor layer (3) faces the strip line (4). The opening (V1) has a rectangular shape and the strip line (4) has an U- shaped configuration. The resonator comprises only one strip line (4). The single resonator is defined by a microstrip lines (9), a dielectric layer (2b), two grounding conductors (3, 5) and the stripline (4).

Regarding claims 14 and 15, figure 4 of Mandai shows a voltage controlled oscillator comprising: a resonator including: a multi-layer substrate having an upper and lower surface, and including at least two conductor layers (3,5,7) which include at least two grounding conductor layers and a plurality of dielectric layers (2a-2g), one of the at least two grounding conductor layers being disposed on the lower surface of the multi-layer substrate; a strip line (4) disposed between the at least two grounding conductor layers; a microstrip line (9) disposed on the upper surface of said multi-layer substrate; and a through hole (V1) formed in said dielectric layers to connect said strip line to said microstrip line; wherein at least a portion of the one of the at least two conductor layers (7) that is closest to said microstrip line (9) and faces the microstrip line is omitted; and a plurality of electronic component elements disposed on the upper surface (2g) of the multi-layer substrate and arranged to define a circuit and inherently the plurality of the electronic component elements and the resonator are electrically connected to each other. The single resonator is defined by a microstrip lines (9), a dielectric layer (2b), two grounding conductors (3, 5) and the strip line (4).

Regarding claim 16, said portion of said one of the at least two conductor layers (5,7) that is omitted is disposed "inside" said multi-layer substrate and is arranged such that said grounding conductor layer (3) disposed on the lower surface of said multi-layer substrate faces said microstrip line (9).

Regarding claims 17, 18, 19, 20 and 21, the portion of said one of the at least two conductor layers (5,7) that is omitted defines an opening in said one of the at least two conductor layers and the opening has a rectangular shape. The strip line (4) has a U shape. The VCO has only one strip line (4) and one microstrip line (9).

Response to arguments

In the Remarks, the Applicant states that the microstrip line (9) in figure 4 of Mandai is a “conductive land”, not a microstrip line. In fact, any strip of metal formed on the dielectric layer is a microstrip line. The terminal X1 of the microstrip line (9) is connected to the conductive film (4) of the resonator via the through holed (V1) (col. 3, lines 40-43). The microstrip line (9) is not connected to any other components (X2) of the circuit. Thus, the microstrip line (9) is a part of the resonator. Moreover, figure 4 of Mandai shows that the microstrip line (9) is not connected to terminal (X2) (see col. 3, lines 1-6).

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hiep Nguyen whose telephone number is (703) 305-0127. The examiner can normally be reached on Monday to Friday from 7:30 A.M. to 4:00 P.M.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached on (703) 308-4876. The fax phone number for this Group is (703) 308-66251.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Hiep Nguyen

02-22-03



TUAN T. LAM
PRIMARY EXAMINER